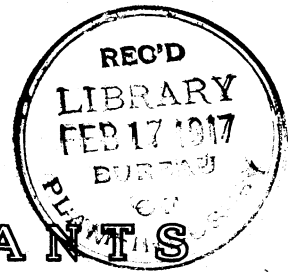


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PLANT IMMIGRANTS

No. 123.

JULY, 1916.

GENERA REPRESENTED IN THIS NUMBER.

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Foreign Seed and Plant Introduction.

EXPLANATORY NOTE.

This multigraphed circular is made up of descriptive notes furnished mainly by Agricultural Explorers and Foreign Correspondents relative to the more important introduced plants which have recently arrived at the Office of Foreign Seed and Plant Introduction of the Bureau of Plant Industry of the Department of Agriculture, together with accounts of the behavior in America of previous introductions. Descriptions appearing here are revised and published later in the INVENTORY OF PLANTS IMPORTED.

Applications for material listed in these pages may be made at any time to this Office. As they are received they are placed on file, and when the material is ready for the use of experimenters it is sent to those on the list of applicants who can show that they are prepared to care for it as well as to others selected because of their special fitness to experiment with the particular plants imported. Do not wait for the annual catalogue entitled NEW PLANT INTRODUCTIONS in which are described the plants ready for sending out.

One of the main objects of the Office of Foreign Seed and Plant Introduction is to secure material for plant experimenters, and it will undertake as far as possible to fill any specific requests for foreign seeds or plants from plant breeders and others interested.

David Fairchild,

Agricultural Explorer in Charge.

February 6, 1917.

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Arachis hypogaea L. (Fabaceae.) 43035. Seed from Buitenzorg, Java. Presented by Mr. L. Koch, Station for Selection of Annual Crops. "Pure strain No. 21. Is almost not affected by severe disease, known here under the name of bacterial-disease. Cultivated at the Plant Breeding Station for Annual Crops." (Koch.)

Belou marmelos (L.) Lyons. (Rutaceae.) 43028. Seed from Rangoon, Burma, India. Presented by Rev. Wm. H. S. Hascall. "Season for fruit, March and April." (Hascall.)

Buchanania latifolia Roxb. (Anacardiaceae.) 43038. Seed from Burma, India. Presented by the Superintendent, Royal Botanic Garden, Sibpur, Calcutta, India. "A medium-sized tree, leafless only for a short time, met with in the dry forests throughout India and Burma, ascending in the Sub-Himalayan tract to 3000 feet. A pellucid gum (peal or pial) which exudes from wounds in the stem is more than half soluble in water. It is said to resemble Bassora gum, to have adhesive properties like inferior gum arabic and to be suitable for dressing textiles. The bark and the fruits furnish a natural varnish. The kernels yield a sweet and wholesome oil (chironji), but owing to their being much prized as a sweetmeat when cooked, the oil is seldom expressed. The kernels, which have a flavour something between that of the pistachio and the almond, are eaten by the natives. In the hills of Central India the fruits with the kernels are pounded and dried and subsequently baked into a sort of bread. From the Panjab and Bombay the leaves are reported as used for fodder. The timber is not very hard nor durable and is of small value, though made into spoons, plates, toys and bedsteads, and is even employed for door and window frames, plough-handles, etc." (Watt, Commercial Products of India, p. 188.)

Canarium indicum Stickman. (Balsameaceae.) 43024. Seeds from Buitenzorg, Java. Presented by Dr. J. C. Koningsberger, Director, Botanic Gardens. "Java-almond. A large handsome Malayan tree, characterised by a remarkable buttressed trunk and latterly compressed aerial basal roots; the latter develop enormous erect flanges of uniform thickness, so that solid circular pieces may occasionally be cut out from them to form ready-made cart wheels. The tree is much cultivated for shade or ornamental in Java. It bears

in great abundance large pendant clusters of dark-purple fruits, which are the size of small plums; these are produced all the year around, but chiefly in June. The kernel of the fruit is edible, being similar in flavour to sweet almonds; it yields by expression an oil used for burning in lamps and for cooking purposes. A desirable tree for planting in avenues, etc. It thrives in hot and moist districts up to about 1500 feet elevation, and prefers deep, well-drained soil. Propagated by seed, which may be sown in nursery beds and kept moist and shaded until germinated." (H. F. Macmillan, Handbook of Tropical Gardening and Planting, p. 146.) Dr. Valetton of Buitenzorg discovered that a very palatable milk could be made from the kernels of this *Canarium* nut which formed an excellent substitute for mother's milk and that babies could be raised on it successfully.

Clerodendrum cyrtophyllum Turcz. (Verbenaceae.) 43021. Seeds from Mokanshan, Chekiang, China. Collected by Mr. Frank N. Meyer, Agricultural Explorer of this Department. "A spreading shrub, from 2 to 5 feet high, sending up many stalks; found on debris on mountain slopes at 1200 to 2000 feet altitude. Leaves glabrous, opposite, light-green; of somewhat fetid odor. Flowers small, white but with large bracts of rosy color, berries blue. Ornamental but somewhat weedy. Of use for large parks and estates in mild climates as a cover shrub for sandy and waste places." (Meyer.)

Iris sp. (Iridaceae.) 43022. Seed from Mokanshan, Chekiang, China. Collected by Mr. Frank N. Meyer, Agricultural Explorer for this Department. "An *Iris*, forming big clumps, found in a garden but said to occur wild in mountain ravines. Flowers reputed to be purplish." (Meyer.)

Juglans insularis Grisebach. (Juglandaceae.) 43032. Seeds from Santiago de las Vegas, Cuba. Presented by Mr. Juan T. Roig, Agricultural Experiment Station. "Cuban native walnut, collected at Trinidad Station, Clara Province." (Roig.) "This interesting Cuban tree has recently been called to the attention of horticulturists by Van Hermann and Roig. It is found in the mountainous sections of the island, sometimes at considerable elevations. I have seen it in the mountains near Trinidad, on the south coast, at an elevation of about 2000 feet, growing among numerous other trees



PLANTING OF SIBERIAN LARCH IN CANADA, *LARIX SIBIRICA*.

At Indian Head, Alberta, where the temperature goes to at least 50 degrees below zero, Mr. N. M. Ross, Superintendent of the Forestry Station of the Dominion Government, has a plantation of this rapidly growing Siberian larch, which is now 8 years old. Its rapid growth and hardiness made it seem to be an unusually promising tree for the forest belts of the plains region of Canada, but unfortunately a bud moth has become established in the plantation and has interfered with its progress. In regions in this country free from this pest it deserves to be further experimented with. In Plant Immigrants No. 72 is shown a photograph of a large tree of this species in Siberia. Photograph, courtesy of Mr. N. M. Ross.



FLOWERING DECIDUOUS BRANCHLETS OF THE JUJUBE, *ZIZIPHUS JUJUBA*.

Unlike most fruit trees, but more like the grapevine, the jujube bears its flowers and fruit on slender branches which are produced each spring. These look like compound leaves, but are true branches. In autumn the leaves fall first and leave the bare slender branchlets, which subsequently drop of themselves. It remains to be determined what bearing this characteristic has on the relation of the fruiting of the jujube to late spring frosts. Photographed (P19661FS) by P. H. Dorsett, Chico Field Station, May 17, 1916. Natural size.

along the bank of a small stream. It seems, however, to be comparatively rare, and does not occur in great numbers. It is erect and slender in habit, growing to a height of 40 or more feet, with foliage somewhat finer than *J. nigra* of the United States. The nuts resemble those of *J. nigra* in size and appearance, though sometimes smaller. The kernels, however, are removed with difficulty, the septae being very thick and woody. In its present wild state the Cuban walnut, as it is called, does not seem of great horticultural value, but with very little improvement by selection it seems that it might become an excellent nut for tropical regions. It has been suggested that it might serve as a stock for the Persian walnut, making possible the culture of this species in Cuba and other tropical regions where it is not now successfully grown. For illustrations of the tree and fruit see Journal of Heredity, December, 1915." (Wilson Popenoe.)

Litchi chinensis Sonnerat. (Sapindaceae.) 43034. Seeds from Swatow, China. Presented by Mr. G. C. Hanson, American Consul. "This fruit is placed on the market at the beginning of summer, and can only be obtained during a very short period. The Swatow litchi has the reputation of not being as good as the Canton variety, which also matures early in the summer. Grown in the neighborhood of Chaochowfu." (Hanson.)

Osterdamia matrella (L.) Kuntze. (Poaceae.) 43023. Seed from Yokohama, Japan. Purchased from the Yokohama Nursery Company. A creeping grass, important for binding coast-sands, which does well on alkali soils, and also as a lawn-grass. Said to be relished by stock.

Paeonia brownii x albiflora. (Ranunculaceae.) 43015. Seeds from Los Angeles, Calif. Presented by Mr. P. D. Barnhart. "From our native paeonia which are the products of flowers that I pollinated with pollen of the Chinese type, such as you grow in the East. I got the material of the Henry A. Dreer people last year. They collected it from white varieties in their great field. I hope to get a cross that will bear large flowers, and plants that are adapted to this climate. Our hills are covered with them, but the flowers are small and inconspicuous, though they begin to bloom, and profusely too, in early February and continue into March. This year the first flowers appeared in January, and those that I worked failed to set seed. I used heavy paper sacks to protect the subjects from rain and insects." (Barnhart.)

Prunus bokhariensis Royle. (Amygdalaceae.) 43039-43048. Seeds of ten varieties of plums from Saharanpur, India. Presented by Mr. A. C. Hartless, Superintendent, Government Botanic Gardens.

Rubia tinctorum L. (Rubiaceae.) 43037. Seed from Paris, France. Procured from Vilmorin-Andrieux & Company. "The root of *Rubia tinctorum* furnishes dyer's madder. The plant is a native of the south of Europe, and is extensively cultivated about Avignon and in Alsace for the roots, which afford the fine scarlet dye so highly valued by dyers and calico printers. A great quantity is grown in the Levant, the north of Africa, and in Holland; but that from Africa and the East, particularly that from Cyprus, is the most esteemed. Several attempts have been made to cultivate it in England, but without profitable success. The roots are dug up the third summer after sowing, and having been deprived of their cuticle, are dried by artificial heat, and then reduced to a powder. Madder has a bitter, astringent taste, and imparts these properties to water and alcohol." (Hogg's Vegetable Kingdom, p. 415.)

Ulmus densa Litvinov. (Ulmaceae.) 43031. Seed from Kieff, Russia. Purchased from Messrs. St. Przedpelski & T. Antoniewicz. "An elm of most remarkable dense growth, sprouting out a little distance above the ground, into a number of stems, which form an umbrella-like head of foliage, which is so dense that it remains always twilight even at bright noon, in an avenue of these trees. This elm loves, apparently, a climate with long hot summers and with winters not too cold. Withstands a fair amount of alkali in the soil and in the irrigation water, and will prove of special value as a shade tree in the hot and dry interior valleys of California, Arizona, Texas and New Mexico." (Frank N. Meyer.)

Notes on Behavior of Previous Introductions.

Prof. C. C. Georgeson, in charge of the Sitka, Agricultural Experiment Stations, writes Oct. 10, 1916. Alaska,

"Your letter of Sept. 19th asks for information concerning the yellow flowered species and varieties of alfalfa, which we are growing at our interior stations, and which were presumably introduced by Professor Hansen, on his several collection trips.

Of the many varieties we have tried, there is one that stands out pre-eminently as the most successful, for the reason (1) that it is thoroughly hardy, having withstood temperatures of 66 to 70 degrees below zero, and (2) it produces seed at our Rampart Station, in latitude $65^{\circ} 30'$, which is an equally important point, inasmuch as we should be unable to propagate it in a practical way, unless we could raise the seed. I have looked up the source of this hardy variety. It was transmitted to me by you in your letter of May 13, 1910. The S. P. I. number is No. 24452, but *Medicago falcata* is the most valuable plant for Alaska that has ever been introduced from any source. It grows freely, the leaves are small but thick on the stem, the stems are in most plants procumbent and they will grow from two to four feet in length. They bloom early and seed freely. The blossoms continue to come until frost. It has one fault: The ripe pods split open very readily and shatter the seed in the process of handling. To save the seed, which I regard as very precious, we, therefore, pick it by hand to a large extent. We have hybrids between this species and *M. sativa*, variety Grimm, which promise to be of still greater value. The Grimm has a spiral pod; *falcata* has a nearly straight pod. Some of the hybrids have curved, or even spiral pods which do not split open readily and the seed does, therefore, not shatter in handling. I find that there is very great variation between individual plants as to habit of growth, size, abundance of leaves, seed production, etc., and in order to select the best types and eventually propagate from them only, we grow these valuable alfalfas as individual plants in rows two by three feet apart. This enables us to study individuals and select seed from those that possess the most valuable qualities. This process will be continued for a few years longer until an upright, vigorous, leafy, seed-bearing strain has been isolated. Altogether we have now some three acres at the Rampart Station, in these alfalfas, two acres of which were seeded last spring. *Medicago falcata* will be of untold value to interior Alaska. The problem now is to produce enough seed so that before long we can begin to distribute it in minute quantities to farmers who will appreciate its value. A word concerning Grimm: It is an excellent variety, and some years it does well, withstanding two or three winters, but each spring we find that a number of plants have winter killed, and

in the spring of 1915, nearly all of our Grimm alfalfa plants proved to be dead. I will say that I have, on several occasions, purchased both plants and seeds from Professor Hansen, of the South Dakota Experiment Station. He has a number of varieties: *Omsk*, *Obb*, *Gobi Desert*, *Semipalatinsk*, *Cherno*, etc., but for some reason, none of them are as valuable as the pure *falcata* at the Fairbanks Station. It was in full bloom the latter part of August, when I visited the station, but it produced no seed. Some pods had formed but they would have no chance of ripening.

I have told you frequently in former letters, that the *Petrowski* turnip, S. P. I. No. 22755, also obtained from the Office of Seed and Plant Introduction, is the most valuable turnip introduced into Alaska. Last year, we grew 240 pounds of seed of this variety at the Fairbanks Station and this year, between 1200 and 1500 pounds of seed from selected roots, and I learn that many small farmers in various sections grow seed of this variety for their own use."

United States Department of Agriculture.
Bureau of Plant Industry.
Office of Foreign Seed and Plant Introduction.
Washington, D. C.

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